

E – Grow with us : An E – Commerce application

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ABSTRACT: Electronic Commerce commonly known as E-Commerce is trading in products & services using the internet. E-Commerce uses technologies like electronic funds transfer, Internet marketing, supply chain marketing, online transaction processing, Electronic Data Interchange (EDI) and inventory management. The objective of this project is to design an online shopping website (E-Grow with us) with an inbuilt content management system for managing the product, merchant and customer database. The main advantage of e-commerce over traditional commerce is the user can search their desired products, compare the prices and order products. This project allows small-scale merchants to sell their products with the help of the internet. This helps our users to purchase goods like seeds, fertilizers, saplings and other things they need without stepping out of the house considering users safety due to the pandemic situation. This also helps the physical stores to adapt themselves to the e commerce era in this pandemic situation without the loss in their sales.

Keyword: CSS - Cascading Style Sheet, DFD - Data Flow Diagram, FRS - Functional Requirement Specification, SRS - System Requirement Specification, E-commerce - Electronic-Commerce EDI - Electronic Data Interchange HTML - Hyper Text Markup Language, GUI - Graphical User Interface.

I.INTRODUCTION:

In this outbreak of COVID-19, the sales of the small-scale merchants and farmers have been affected to a large extent and Due to the lockdown, both retailers and customers were affected in their own way. Retailers couldn't find a way to sell their products, whereas customers were not ready to buy products in a large quantity due to the heavy crowd. So, we have come with a solution of developing an E-commerce site which only focuses on the farmers whom they found hard to buy their basic provisions. Our Solution website will have all the agricultural related products including seeds, fertilizers and saplings. Customers can explicitly view or buy the products from our website. Through this solution, both the retailers and customers will be benefitted on their own way.

This process includes multi-tiered architecture, server and client-side scripting techniques, implementation technologies such as Django Python, Oscar, Java Script, HTML, CSS, Programming language (such as Python) and Relational databases (SqlLi8). Django deals with the backend process of the entire application in which the front end will be maintained by HTML and JavaScript. Django is processed by MVT (Model, Template, View) Architecture. For security purposes CSRF (Cross-site Request Forgery) token is implemented in all sorts of information sections and forms. Payment processing is done using PayPal which is the payment gateway service that will take care of all kinds of online transactions. i.e., Card Transactions. Admin can view the payment, order graph, total orders, total revenue in the admin dashboard.

II.METHODOLOGY:

Strategic flow:

WEB DESIGN – It is the process of developing a layout and structural design for the website and to create the graphical elements

- FRONT END DEVELOPMENT – Front End development is the process of how the website will look like and it needs to be full and full of coding and integration of web tools.
- BACK-END DEVELOPMENT – Back End development is the main integration of databases and features like checkout, cart, admin, user login, product id, etc.

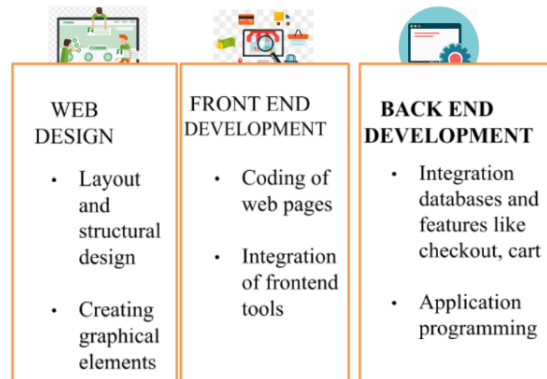


Fig 1. Flow diagram

III.FRONT END DEVELOPMENT

All the Webpages are developed using HTML, a simple open source for creating webpages.CSS is used for designing the Web Pages and adding styles to the webpage. Bootstrap is used for making the application compatible to various devices containing different screen dimensions. Django is used for the back-end portal development for maintaining the authentication process. It is also used for adding and removing products from the database. It consists of a large number of controls such as text boxes, buttons and labels for assembling, configuring and manipulating code to create HTML pages.

The application contains the following Modules:

- Registration Page
- Login Page
- Admin Page
- Home Page
- Cart Page
- Check-out Page
- Payment Gateway Page
- Dashboard Page
- Product description

Page Registration Page:

This Module has both the customer registration as well as the admin registration forms separately where new customers can register their account using their Mail- id, which can be used for further purposes and they can secure their account with the passwords. The admin can register their Name and Mail-ID and they can secure their account with the passwords.

Login Page:

This Module enables the customer as well as the admin to login in to their accounts with the help of their Mail-ID and password. It also supports the user if he/she forgets the 10password and helps them to change their password.

Admin Page:

Once the admin login is completed, he/she is redirected to their page in which they can add, delete and update items and products their price no of stock available discounts given to the products etc. Also, he can view no of products sold and the no of customers registered etc.

Home Page:

Whenever a customer is logged in, he/she is directed to the home page where he/she can view the products available for sale and the price. The user can also view the products category wise and he can add the product to the if he wants to buy them. He/she can also search for a particular product by typing the name of the product in the search bar.

Cart Page:

One can access their cart by clicking on the cart icon. The cart page contains the products that users have added to the cart. The user can review the item that he/she wants to but if they need, they can also delete the product from the cart by clicking on the delete icon.

Check-Out Page:

One can access their cart by clicking on the cart icon. The cart page contains the products that users have added to the cart. The user can review the item that he/she wants to but if they need, they can also delete the product from the cart by clicking on the delete icon.

Payment Gateway Page:

The payment is done with the help of open-source external gateway (PAYPAL). The user pays the priced amount directly to the producers account without any intermediate and when the payment is completed the payment successful page is displayed and the confirmation of the order is given to both the user and the producer.

Dashboard Page:

The dashboard page is used for complete accessing of the products only admins. Admin can add, delete, update any of the products. They also can check the total orders, total revenue, discounts, offers, low stock alerts, product types, product categories etc.

Product description Page:

The product description page is the page where all the information of the particular product will be available and customers can check the exact details about the product. In the product description page add to cart, add to Wishlist, recently viewed products, product rating, product details are available.

IV.BACKEND:

A database management system is the main parameter of building a website. This deals with all the backend parts, i.e., Authentication, Storage, Admin purpose storage, etc. For this project SQLi8 is used for Database backend. SQLi8 is an open-source database software developed by IBM Corporation. SQLi8 is the default database of the Python language. We just need to import it in the IDE. SQLi8 database authentication is used in the SETTINGS.PY file in our project where all the interconnections are established. This Database stored all the information in the backend. We can re-store it whenever we need. Django has a variety of databases like POSTGRESQL, MYSQL, SQLi8, DYNAMODB. Django has its default backend, that is also known as the admin panel where all the frontend evaluations are stored like searching, rating, user login customers, admin customers, orders, order-id, product stocks, etc., In Django, we don't need to do a single line of coding query to get our database part because, it will be automatically configured with the help of Django. Backend security will be taken care of by IBM Corporation and as a user CSRF token is also configured for this project where all the user information and admin information will be safe and secure.

V.WEB DESIGN:

The last few decades have seen a significant amount of research devoted to developing design theories with the ultimate aims at clarifying the human ability of designing in a scientific way and at the same time, producing the practical knowledge about design methodology. Such knowledge is believed to be useful and essential to construct computer aided design systems. As one of the most complex computer software is very difficult to design. There are many factors that affect designs and many stakeholders, i.e., people who participate in the design process, play various different roles in the design processes and influence the design of software. The computer scientists are looking for answers in the context of software development for the questions that arise in the area of design theory by the researchers. In fact, software

design shares many characteristics with designs in other fields. One important feature of DFD's is that it is logical rather than physical. The elements of the system do not depend on the vendor or hardware. They specify in precise, concise manner the working of the systems and how it hangs together.

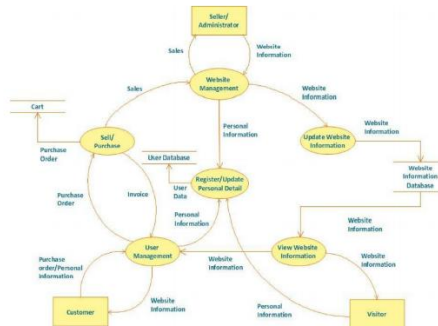


Fig 2. Design flow

Input Design:

Inputs and outputs are an important part of any system, so while designing the system inputs and outputs the whole requirement of the system is to be identified and the inputs and outputs for the various processes of the system should be listed clearly. Using the proper design, the developer can analyze and see to it that the process is well done such is the way in which the input design is designed for this particular project.

Output Design:

Output refers to the results and information that are generated by the system. In many cases, output is the main reason for developing the system and the basis on which the usefulness of the system is evaluated. By successfully designing and executing the process we can see and make sure the real output for the process is received. The output design is particular for each and every project here the developer ensures the proper design is implemented to avoid confusion and maintain a good view of the things that are really necessary in the particular process here.

VI.CONCLUSION

E-commerce has bloomed over the years and is one of the fastest-growing domains in the online world. Though it took some time for this to be accepted by the end-users, today we are at a point where the majority of the people love to shop online. There were numerous concerns revolving around online shopping at its launch, but over years people tend to have started trusting E-commerce for all their shopping needs. In the last few years, the growth of e-commerce has increased to an extent that more buyers have understood the benefits of using online shopping platforms. There is more scope for online business in agriculture because it is the backbone of our country and it needs a more efficient way of buying and selling products. Exposing E-commerce into the agricultural field is necessary.

VII.RESULT

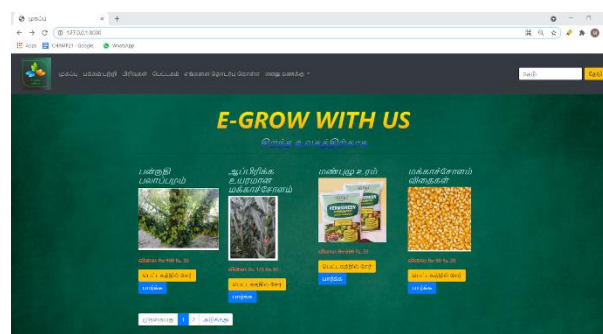


Fig 3. Website homepage

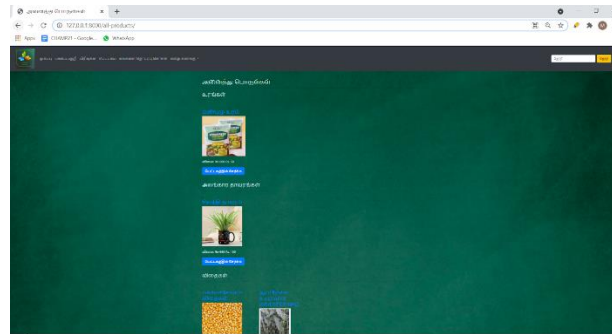


Fig 4. Website payment portal

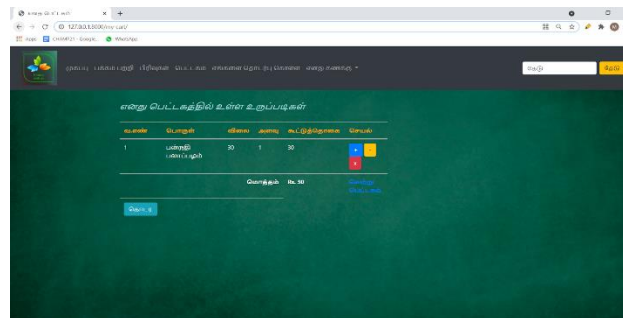


Fig 5. Website product page

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